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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,470	12/28/2001	Richard E. Smalley	11321-P012USD9	9933

7590 08/11/2005  
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EXAMINER

HENDRICKSON, STUART L

ART UNIT PAPER NUMBER

1754

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/033,470	SMALLEY ET AL.	
	Examiner	Art Unit	
	Stuart Hendrickson	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 5/4/05.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

168-172, 174-177, 184-203, 205, 206, 209, 211-214

- 4) ☒ Claim(s) 117, 119-122, 127-131, 135-137, 139, 140 and 163-166 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) other than listed below is/are rejected.
- 7) ☒ Claim(s) 128, 130, 140, 165, 166, 169, 185, 187, 194, 195, 201 and 203 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                        |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/28/04</u> . | 6) <input type="checkbox"/> Other: _____   |

TS

T-D

Art Unit: 1754

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 171, 172, 174 are rejected under 35 U.S.C. 102(b) as being anticipated by Ajayan et al. SCIENCE article.

The reference teaches nanotubes in epoxy-polymer. 'carbon' encompasses nanotubes, so it fulfills both roles. In so far as the claims are interpreted (or will be amended) to require a non-nanotube carbon, then the examiner takes Official Notice that nanotubes are expected to have trace carbon impurities from their synthesis. No difference is seen in the structure or properties, as the materials are the same as claimed.

Claims 117, 119, 120, 127, 131, 135, 139, 170-172, 174, 184, 186, 188, 189, 200, 202, 214 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ajayan et al. SCIENCE article.

The reference does not explicitly embody SWNTs, but they are suggested on pg. 1214 middle. Using the claimed amount, type, etc. is an obvious expedient to make a conductive composition.

Claims 121, 122, 129, 136, 137, 163, 164, 168, 175-177, 196-199, 205, 206, 209, 211-213 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ajayan et al. as applied to claims 117, 119, 120, 127, 131, 135, 139, 170-172, 174, 184, 186, 188, 189, 200, 202, 214 above, and further in view of applicants' admissions as to the scope and content of the prior art.

Ajayan does not teach the claimed polymers, etc., however applicants admit on pgs. 62, 63 of the specification that these are old and known. Using them in the composites of Ajayan is an obvious expedient to make a polymeric composite. In any event, the examiner takes Official Notice that the claimed polymers, structural agents and other additives are old and known in the art. Using them in the polymer of Ajayan is an obvious expedient to exploit the properties of the nanotubes (Ajayan pg. 1212). Concerning the process steps (claim 203 etc.), the examiner takes Official Notice that these are old and known. Indeed, it appears that the only support applicants have for these features is in the prior-art documents they have incorporated by reference.

Art Unit: 1754

Claims 190-193 rejected under 35 U.S.C. 103(a) as being unpatentable over Ajayan et al. as applied to claims 117, 119, 120, 127, 131, 135, 139, 170-172, 174, 184, 186, 188, 189, 200, 202, 214 above, and further in view of Stephan et al. article.

Ajayan does not teach doped nanotubes, however Stephan pg. 1684 does. Using them in the polymer of Ajayan is an obvious expedient to make a conductive composite.

Applicant's arguments filed 1/21, 5/4/05 have been fully considered but are not persuasive.

The 'arrangement' (claim 214, etc.) does not require anything beyond random agglomeration. Ajayan clearly suggests the use of SWNTs. Given the date of the reference in the history of nanotube development, its teachings are not 'speculative'. No difference is seen in the lengths, given that the claims encompass a large range of expected lengths. Ajayan teaches nanotubes in polymer, thus no external motivation is needed to put them there. As Ajayan teaches clumped nanotubes to lead to defects, the 10E6 claims are allowed. In consideration of the arguments, 'derivatized' nanotubes are also indicated allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication should be directed to examiner Hendrickson at telephone number (571) 272-1351.



Stuart Hendrickson  
examiner Art Unit 1754